Hewlett-Packard Photosmart 8450 – Print Permanence Ratings

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The HP Photosmart 8450 is an 8-ink 8.5x11-inch photo printer utilizing high-stability dye-based ink formulatons that have been optimized for maximum overall image permanence when used with HP Premium Plus Photo papers.

Ink System: The eight HP Vivera dye-based inks used in the 8450 are contained in three cartridges with built-in thermal inkjet heads and include cyan, light cyan, magenta, light magenta, yellow, and three neutral gray/black inks (light, medium, and dark) in the HP Gray Photo cartridge. The formulations of all eight inks have been optimized for maximum permanence when used with HP's premium swellable-polymer photo papers. Maximum resolution: up to 4800 x 1200 dpi (dots per inch).

Supported sheet paper sizes: 4"x6", 5"x7", 8"x10", U.S. letter (8.5"x11"), U.S. legal (8.5"x14"), A-4 size. Borderless printing on standard photo sizes up to 8.5"x11".

Operating Systems and Connectivity: Windows 98, 2000/XP, ME; Mac OSX 10.1.5 or later. USB and Ethernet connectivity. Bluetooth using optional adapter; optional W-Fi 802.11b adapter.

Special Features: Camera memory card slots for Compact Flash Type I and II, Memory Stick, SD/MMC, xD, USB flash drive. Can print directly from camera cards or PictBridge-enabled cameras using front camera port, or save image files to a computer. 2.5-inch color LCD screen is used to view, select, and edit images from camera cards, view menus, page layout, and ink status. Media sensor for media type and size. Color management controls via software driver; ICC support and Adobe RGB. Simple printer conversion of RGB color images to high-quality black-and-white prints.

Price: $199.99 (USA) HP Model No. Q3388A.

With the 3-level HP Vivera Gray Photo inks and the "Grayscale" and "Black & White" print modes, the 8450 can make high-quality and long-lasting black-and-white prints with excellent neutrality throughout the tonal scale.

Display Permanence Ratings and Album/Dark Storage Permanence Ratings (Years Before Noticeable Fading and/or Changes in Color Balance Occur)[1]

Papers Printed With Hewlett-Packard Vivera 97, 99, and 100 Inks – Color Images	Displayed Prints Framed Under Glass[2]	Displayed Prints Framed With UV Filter[3]	Displayed Prints Not Framed (Bare-Bulb)[4]	Album/Dark Storage Rating at 73°F & 50% RH (incl. Paper Yellowing)[5]	Resistance to Ozone[6]	Resistance to High Humidity[7]	Resistance to Water[8]	Are UV Brighteners Present?[9]
HP Premium Plus Photo Paper, High Gloss	**108 years**	>130 years	29 years	>200 years	now in test	now in test	low	no
HP Premium Plus Photo Paper, Soft Gloss	**108 years**	>130 years	29 years	>200 years	now in test	now in test	low	no
HP Premium Photo Paper, Glossy	**108 years**	>130 years	29 years	>200 years	now in test	now in test	low	no
HP Premium Photo Paper, Soft Gloss	**108 years**	>130 years	20 years	>200 years	now in test	now in test	low	no
HP Premium High-Gloss Film	**27 years**	>35 years	now in test [6]	now in test	now in test	now in test	high	yes
HP All-In-One Printing Paper	**23 years**	24 years	18 years	now in test	now in test	now in test	low	no
HP Photo Paper, Glossy	**11 years**	16 years	now in test [6]	now in test	now in test	now in test	moderate[8]	yes
HP Everyday Photo Paper, Semi-Gloss	**7 years**	13 years	3 years	now in test	now in test	now in test	low	some
HP Bright White Inkjet Paper (plain paper)	**9 years**	13 years	6 years	now in test	now in test	now in test	low	yes

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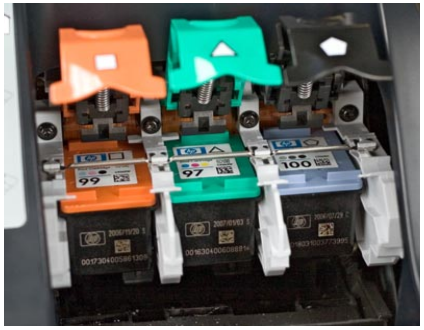
Black-and-White Prints Made with the HP Vivera No. 100 Gray Photo Ink Cartridge in “Greyscale” and “Black & White” Modes



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The HP Photosmart 8450 is supplied with three ink cartridges, shown here. In addition, the optional HP No. 94 pigmented black ink cartidge can be used for optimal text quality with plain paper printing.

Black and White Photo Printing: The HP 8450 provides several ways to print black-and-white photographs. For the best quality and longest lasting prints when printing with a computer, the “Grayscale” print mode should be selected through the printer driver (in the “Paper Type & Quality” dialogue box). When used as a stand-alone printer, without a computer, and printing with camera memory cards or USB flash drives, the “Black and White” print mode should be selected from the “Add Color Effect” menu. Both of these modes utilize the 3-level gray/black inks in the HP Vivera Photo Gray Print Cartridge 100. Both of these print modes can also be used to make a simple, high-quality conversion of RGB color image files to black-and-white prints, without the need to convert the color files to black-and-white in Photoshop. With monochrome image files, black and white prints can also be made with the normal “color” printing modes provided by the 8450. These prints will have a significant “color ink” component, however, and may not give the excellent gray scale neutrality and linearity provided by the two black-and-white print modes.

Display Permanence Ratings and Album/Dark Storage Permanence Ratings (Years Before Noticeable Fading and/or Changes in Color Balance Occur)[1]

Papers Printed With Hewlett-Packard Vivera 100 Inks – “Grayscale” B&W Images	Displayed Prints Framed Under Glass(2)	Displayed Prints Framed With UV Filter(3)	Displayed Prints Not Framed (Bare-Bulb)(4)	Album/Dark Storage Rating at 73°F & 50% RH (incl. Paper Yellowing)(5)	Resistance to Ozone(6)	Resistance to High Humidity(7)	Resistance to Water(8)	Are UV Brighteners Present?(9)
HP Premium Plus Photo Paper, High Gloss	**115 years**	>140 years	now in test	>200 years	now in test	now in test	low	no
HP Premium Plus Photo Paper, Soft Gloss	**115 years**	>140 years	now in test	>200 years	now in test	now in test	low	no
HP Premium Photo Paper, Glossy	**115 years**	>140 years	now in test	>200 years	now in test	now in test	low	no
HP Premium Photo Paper, Soft Gloss	**115 years**	>140 years	now in test	>200 years	now in test	now in test	low	no

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Notes on These Tests:

1) Display Permanence Ratings (DPR) are based on accelerated light stability tests conducted at 35 klux with glass-filtered cool white fluorescent illumination with the sample plane air temperature maintained at 24°C and 60% relative humidity. Data were extrapolated to a display condition of 450 lux for 12 hours per day using the Wilhelm Imaging Research, Inc. "Visually-Weighted Endpoint Criteria Set v3.0." and represent the years of display for easily noticeable fading, changes in color balance, and/or staining to occur. See: Henry Wilhelm, "How Long Will They Last? An Overview of the Light-Fading Stability of Inkjet Prints and Traditional Color Photographs," *IS&T's 12th International Symposium on Photofinishing Technologies,* sponsored by the Society for Imaging Science and Technology, Orlando, Florida, February 2002: *<www.wilhelm-research.com> <Wilhelm_IS&T_Paper_Feb_2002.pdf>.* For a study of endpoint criteria correlation with human observers, see: Yoshihiko Shibahara, Makoto Machida, Hideyasu Ishibashi, and Hiroshi Ishizuka, "Endpoint Criteria for Print Life Estimation," *Final Program and Proceedings: IS&T's NIP20 International Conference on Digital Printing Technologies,* pp. 673–679, sponsored by the Society for Imaging Science and Technology, Salt Lake City, Utah, November 2004.

See also: Henry Wilhelm, "A Review of Accelerated Test Methods for Predicting the Image Life of Digitally-Printed Photographs – Part II," *Final Program and Proceedings: IS&T's NIP20 International Conference on Digital Printing Technologies,* pp. 664–669, sponsored by the Society for Imaging Science and Technology, Salt Lake City, Utah, November 2004. Also available, with *color illustrations: <www.wilhelm-research.com> <WIR_IST_2004_11_HW.pdf>.* High-intensity light fading reciprocity failures in these tests are assumed to be zero. Illumination conditions in homes, offices, museums, and galleries do vary, however, and color images will last longer when displayed under lower light levels; likewise, the life of prints will be shortened when displayed under illumination that is more intense than 450 lux. Ink and paper combinations that have not reached a fading or color balance failure point after the equivalent of 100 years of display are given a rating of "more than 100 years" until such time as meaningful dark stability data are available (see discussion in No. 5 below).

Eastman Kodak, AgfaPhoto, and some others base their home display-life calculations on 120 lux/12 hours per day, rather than 450 lux/12 hours per day. Some of Kodak's display-life predictions for Kodak Ultima Picture Paper are *almost 15X* longer than the predictions obtained in the more conservative tests conducted by WIR for this ink/media combination, and can be accounted for by differences in the two test methodologies. For example, Kodak uses 80 klux UV-filtered cool white fluorescent illumination; WIR uses 35 klux glass-filtered cool white fluorescent illumination. Kodak uses a starting density for fading measurements of only 1.0; WIR uses starting densities of both 0.6 and 1.0. Kodak uses the "ISO Illustrative" endpoint criteria set; WIR uses the visually-weighted WIR Endpoint Criteria Set v3.0. Kodak's display environment light exposure assumption for calculating display life is 120 lux for 12 hours per day (UV filtered); WIR uses 450 lux for 12 hours per day (glass filtered). Kodak maintains 50% RH in their accelerated tests; WIR uses 60% RH. Key aspects of Kodak's test methodology and assumptions for calculation of "years of display" are also very different from those used by most other manufacturers of printers, inks, and media. The display lux level assumption of 120 lux (see Table 1) alone makes Kodak's display-life predictions 3.75X greater than the display-life predictions provided by other manufacturers and by WIR. With many ink/media combinations, Kodak's use of a UV filter instead of the glass filter used by other companies in accelerated light fading tests (see Table 2) further increases Kodak's display-life predic-

Table 1. "Standard" Home Display Illumination Levels Used by Printer, Ink, and Photo Paper Manufacturers

120 lux/12 hrs/day	450 lux or 500 lux/10 hrs/day or 12 hrs/day
Kodak AgfaPhoto[10]	Fuji Hewlett-Packard Epson Canon Lexmark Ilford Konica Minolta Agfa-Gevaert DuPont Ferrania InteliCoat Somerset Arches LexJet Lyson Luminos Hahnemuhle Premier Imaging Products American Inkjet MediaStreet

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Notes on These Tests (continued from previous page):

Table 2. Filtration Conditions Used by Printer, Ink, and Paper Manufacturers with CW Fluorescent Illumination

UV Filter	Glass Filter
Kodak	Fuji Hewlett-Packard Epson Canon Lexmark Ilford Agfa-Gevaert AgfaPhoto[10] Konica Minolta DuPont Ferrania InteliCoat Somerset Arches LexJet Lyson Luminos Hahnemuhle Premier Imaging Products American Inkjet MediaStreet

tions. For a description of the Kodak tests, see: D. E. Bugner, C. E. Romano, G. A. Campbell, M. M. Oakland, R. J. Kapusniak, L. L. Aquino, and K. E. Maskasky, “The Technology Behind the New KODAK Ultima Picture Paper – Beautiful Inkjet Prints that Last for Over 100 Years,” *Final Program and Advanced Printing of Paper Summaries – IS&T’s 13th International Symposium on Photofinishing Technology,* pp. 38–43, Las Vegas, Nevada, February 8, 2004. See also: D. E. Bugner, C. E. Romano, G. A. Campbell, M. M. Oakland, R. J. Kapusniak, L. L. Aquino, and K. E. Maskasky, *The Technology Behind the New Kodak Ultima Picture Paper – Beautiful Inkjet Prints that Last for Over 100 Years – Update – May 8, 2004,* Eastman Kodak Company, Rochester, New York. Available as a PDF file from <www.kodak.com>. Together with Kodak’s own test data, the articles also include light stability data for Kodak Ultima Picture Paper obtained from ongoing tests conducted by the Image Permanence Institute at the Rochester Institute of Technology (Rochester, New York), and from Torrey Pines Research (Torrey Pines, California). The tests were conducted using the Kodak test procedures and included the use of a UV filter with cool white fluorescent illumination; the Image Permanence Institute and Torrey Pines Research also based print-life calculations on 120 lux for 12 hours per day.

2) In typical indoor situations, the “Displayed Prints Framed Under Glass” test condition is considered the single most important of the three display conditions listed. *All* prints intended for long-term display should be framed under glass or plastic to protect them from staining, image discoloration, and other deterioration caused by prolonged exposure to cigarette smoke, cooking fumes, insect residues, and other airborne contaminants; this precaution applies to traditional silver-halide black-and-white and color photographs, as well as inkjet, dye-sub, and other types of digital prints.

3) Displayed prints framed with ultraviolet filtering glass or ultraviolet filtering plastic sheet generally last longer than those framed under ordinary glass. How much longer depends upon the specific print material and the spectral composition of the illuminate, with some ink/paper combinations benefitting a great deal more than others. Some products may even show reduced life when framed under a UV filter because one of the image dyes or pigments is disproportionately protected from fading caused by UV radiation and this can result in more rapid changes in color balance than occur with the glass-filtered and/or the bare-bulb illumination conditions. For example, if a UV filter protects the cyan and magenta inks much more than it protects the yellow ink in a particular ink/media combination, the color balance of the image may shift toward blue more rapidly than it does when a glass filter is used (in which case the fading rates of the cyan, magenta, and yellow dyes or pigments are more balanced in the neutral scale). Keep in mind, however, that the major cause of fading with most digital and traditional color prints in indoor display conditions is visible light and although a UV filter may slow fading, it will not stop it. For the display permanence data reported here, Acrylite OP-3 acrylic sheet, a “museum quality” UV filter supplied by Cyro Industries, was used.

4) Illumination from bare-bulb fluorescent lamps (with no glass or plastic sheet between the lamps and prints) contains significant UV emissions at 313nm and

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Notes on These Tests (continued from previous page):

365nm which, with most print materials, increases the rate of fading compared with fluorescent illumination filtered by ordinary glass (which absorbs UV radiation with wavelengths below about 330nm). Some print materials are affected greatly by UV radiation in the 313–365nm region, and others very little. "Gas fading" is another potential problem when prints are displayed unframed, such as when they are attached to kitchen refrigerator doors with magnets, pinned to office walls, or displayed inside of fluorescent illuminated glass display cases in schools, stores, and offices. Field experience has shown that, as a class of media, microporous "instant dry" papers used with dye-based inkjet inks can be very vulnerable to gas fading when displayed unframed and/or stored exposed to the open atmosphere where even very low levels of ozone and certain other air pollutants are present. In some locations, displayed unframed prints made with microporous papers and dye-based inks have suffered from extremely rapid image deterioration. This type of premature ink fading is not caused by exposure to light. Polluted outdoor air is the source of most ozone found indoors in homes, offices and public buildings. Ozone can also be generated indoors by electrical equipment such as electrostatic air filters ("electronic dust precipitators") that may be part of heating and air conditioning systems in homes, office buildings, restaurants, and other public buildings to remove dust, tobacco smoke, etc. Electrostatic air filtration units are also supplied as small "tabletop" devices. Potentially harmful pollutants may be found in combustion products from gas stoves; in addition, microscopic droplets of cooking oil and grease in cooking fumes can damage unframed prints. Because of the wide range of environmental conditions in which prints may be displayed or stored, Display Permanence Ratings for the bare-bulb illumination condition will not be listed for paper/ink combinations of known susceptibility to gas fading. For all of the reasons cited above, prints made with microporous papers and dye-based inks should always be displayed framed under glass or plastic.

5) Prints stored in the dark may suffer slow deterioration that is manifested in yellowing of the print paper, image fading, changes in color balance, and physical embrittlement, cracking, and/or delamination of the image layer. These types of deterioration may affect the paper support, the image layer, or both. Each type of print material (ink/paper combination) has its own intrinsic dark storage stability characteristics; some are far more stable than others. Rates of deterioration are influenced by temperature and relative humidity; high temperatures and/or high relative humidity exacerbate the problems. Long-term dark storage stability is determined using Arrhenius accelerated dark storage stability tests that employ a series of elevated temperatures (e.g., 50°C, 57°C, 64°C, 71°C, and 78°C) at a constant relative humidity of 50% RH to permit extrapolation to ambient room temperatures (or other conditions such those found in sub-zero, humidity-controlled cold storage preservation facilities). Because many types of inkjet inks, especially those employing pigments instead of dyes, are exceedingly stable when stored in the dark, the eventual life of prints made with these inks may be limited by the instability of the paper support, and not by the inks themselves. Due to this concern, as a matter of policy, Wilhelm Imaging Research does not provide a Display Permanence Rating of greater than 100 years for any inkjet or other photographic print material unless it has also been evaluated with Arrhenius dark storage tests and the data indicate that the print can indeed last longer than 100 years without noticeable deterioration when stored at 73°F (23°C) and 50% RH. Arrhenius dark storage data are also necessary to assess the physical and image stability of a print material when it is stored in an album, portfolio box, or other dark place. The Arrhenius data given here are only applicable when prints are protected from the open atmosphere; that is, they are stored in closed boxes, placed in albums within protective plastic sleeves, or framed under glass or high-quality acrylic sheet. If prints are stored, displayed without glass or plastic, or otherwise exposed to the open atmosphere, low-level air pollutants may cause significant paper yellowing within a relatively short period of time. Note that these Arrhenius dark storage data are for storage at 50% RH; depending on the specific type of paper and ink, storage at higher relative humidities (e.g., 70% RH) could produce significantly higher rates of paper yellowing and/or other types of physical deterioration.

6) Tests for resistance to ozone are conducted using an accelerated ozone exposure test (conducted at 23°C and 60% RH) and the reporting method outlined in: Kazuhiko Kitamura, Yasuhiro Oki, Hidemasa Kanada, and Hiroko Hayashi (Seiko Epson), "A Study of Fading Property Indoors Without Glass Frame from an Ozone Accelerated Test," *Final Program and Proceedings – IS&T's NIP19: International Conference on Digital Printing Technologies,* sponsored by the Society for Imaging Science and Technology, New Orleans, Louisiana, September 28 – October 3, 2003, pp. 415–419. WIR test methods for ozone resistance are described in: Michael Berger and Henry Wihelm, "Evaluating the Ozone Resistance of Inkjet Prints: Comparisons Between Two Types of Accelerated Ozone Tests and Ambient Air Exposure in a Home," *Final Program and Proceedings: IS&T's NIP20 International Conference on Digital Printing Technologies,* pp. 740–745, sponsored by the Society for Imaging Science and Technology, Salt Lake City, Utah, November 2004. Also available in PDF format from *<www.wilhelm-research.com> <WIR_IST_2004_11_MB_HW.pdf>.*

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7) Changes in image color and density, and/or image diffusion (“image bleeding”), that may take place over time when prints are stored and/or displayed in conditions of high relative humidity are evaluated using a humidity-fastness test maintained at 86°F (30°C) and 80% RH. Depending on the particular ink/media combination, slow humidity-induced changes may occur at much lower humidities – even at 50–60% RH. Test methods for resistance to high humidity and related test methods for evaluating “short-term color drift” in inkjet prints have been under development since 1996 by Mark McCormick-Goodhart and Henry Wilhelm at Wilhelm Imaging Research, Inc. See: Mark McCormick-Goodhart and Henry Wilhelm, “New Test Methods for Evaluating the Humidity-Fastness of Inkjet Prints,” *Proceedings of “Japan Hardcopy 2005” – The Annual Conference of the Imaging Society of Japan,* Tokyo, Japan, June 9, 2005, pp. 95–98. Available in PDF format from <www.wilhelm-research.com> <WIR_JapanHardcopy2005MMG_HW.pdf>

See also, Henry Wilhelm and Mark McCormick-Goodhart, “An Overview of the Permanence of Inkjet Prints Compared with Traditional Color Prints,” *Final Program and Proceedings – IS&T’s Eleventh International Symposium on Photofinishing Technologies,* sponsored by the Society for Imaging Science and Technology, Las Vegas, Nevada, January 30 – February 1, 2000, pp. 34–39. See also: Mark McCormick-Goodhart and Henry Wilhelm, “Humidity-Induced Color Changes and Ink Migration Effects in Inkjet Photographs in Real-World Environmental Conditions,” *Final Program and Proceedings – IS&T’s NIP16: International Conference on Digital Printing Technologies,* sponsored by the Society for Imaging Science and Technologies, Vancouver, B.C., Canada, October 15–20, 2000, pp. 74–77.

See also: Mark McCormick-Goodhart and Henry Wilhelm, “The Influence of Relative Humidity on Short-Term Color Drift in Inkjet Prints,” *Final Program and Proceedings – IS&T’s NIP17: International Conference on Digital Printing Technologies,* sponsored by the Society for Imaging Science and Technology, Ft. Lauderdale, Florida, September 30 – October 5, 2001, pp. 179–185; and: Mark McCormick-Goodhart and Henry Wilhelm, “The Correlation of Line Quality Degradation With Color Changes in Inkjet Prints Exposed to High Relative Humidity,” *Final Program and Proceedings – IS&T’s NIP19: International Conference on Digital Printing Technologies,* sponsored by the Society for Imaging Science and Technology, New Orleans, Louisiana, September 28 – October 3, 2003, pp. 420–425.

8) Data from waterfastness tests are reported in terms of three subjective classes: “high,” “moderate,” and “low.” Both “water drip” tests and “standing water droplets/gentle wipe” tests are employed.

9) Fluorescent brighteners (also called “UV brighteners,” “optical brighteners,” or “optical brightening agents” [OBA’s]) are white or colorless compounds added to the image-side coatings of many inkjet papers – and nearly all “plain papers” – to make them appear whiter and “brighter” than they really are. Fluorescent brighteners absorb ultraviolet (UV) radiation, causing the brighteners to fluoresce (emit light) in the visible region, especially in the blue portion of the spectrum. Fluorescent brighteners can lose activity – partially or completely – as a result of exposure to light. Brighteners may also lose activity when subjected to high temperatures in accelerated thermal aging tests and, it may be assumed, in long-term storage in albums or other dark places under normal room temperature conditions. With loss of brightener activity, papers will appear to have yellowed and to be “less bright” and “less white.” In recent years, traditional chromogenic (“silver-halide”) color photographic papers have been made with UV-absorbing interlayers and overcoats and this prevents brighteners that might be present in the base paper from being activated by UV radiation. It is the relative UV component in the viewing illumination that determines the perceived “brightening effect” produced by fluorescent brighteners. If the illumination contains no UV radiation (for example, if a UV filter is used in framing a print), fluorescent brighteners are not activated and, comparatively speaking, the paper appears to be somewhat yellowed – and not as “white.” This spectral dependency of fluorescent brighteners makes papers containing such brighteners look different depending on the illumination conditions. For example, prints displayed near windows are illuminated with direct or indirect daylight, which contains a relatively high UV component, and if an inkjet paper contains brighteners, this causes the brighteners to strongly fluoresce. When the same print is displayed under incandescent tungsten illumination, which has a low UV component, the brighteners have little effect. Another potential drawback of brighteners is that brightener degradation products may themselves be a source of yellowish stain. These problems can be avoided by not adding fluorescent brighteners to inkjet photographic papers during manufacture. When long-term image permanence is of critical importance – with museum fine art collections, for example – papers with fluorescent brighteners should be avoided where possible.

10) Although the waterfastness of the color image itself is very high with this paper, the absorbent paper base itself may become cockled, curled, and physically distorted after contact with water. For this reason, the waterfastness of this paper/ink combination is listed as “moderate.”

11) For calculating “years of display,” AgfaPhoto became the first company in the world to adopt Kodak’s “120 lux/12 hours per day” criterion for reporting indoor light stability predictions. And, like Kodak’s “100 year” claims for Kodak Generations and Endura silver halide color negative papers and Ultima Picture Paper, AgfaPhoto is also claiming a “100 year” display life for its newest, analog/digital silver-halide color negative papers. See, for example: *Agfa Technical Data:*

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Agfacolor Splendix Paper and Agfacolor Sensatis Paper, Technical Data Sheet P-90-E3, 3rd Edition, 03/2004: "With optimum processing the prints can be stored under typical domestic and exhibition conditions (120 Lux / 12 hours per day) approx. up to ca. hundred years without significant bleaching of the dyes." (See page 4.) The Agfacolor Data Sheet is available in PDF format from <www.agfaphoto.com> AgfaPhoto has indicated that it will continue to use a glass filter in its indoor light stability tests. Kodak is currently using a polycarbonate UV filter in its cool white fluorescent accelerated indoor home light stability tests with inkjet papers.

On November 1, 2004, Agfa-Gevaert NV, headquartered in Mortsel, Belgium, was split into two completely separate companies. The part of the original company that manufactures traditional B&W and color silver halide materials, finishing, and lab equipment became a new, independent company called AgfaPhoto GmbH, with its headquarters located in Leverkusen, Germany. Agfa-Gevaert NV, which manufactures inkjet papers and other imaging products, has indicated that it will continue to use 450 lux/12 hours per day with a glass filter as the "standard home display condition" for making display-life predictions.

Although now separate companies, both Agfa-Gevaert and AgfaPhoto will continue to use "Agfa" in their names and in product advertisements for a transitional period. "Agfa" is the historic abbreviation of the company name Agfa-Gevaert, and the brand "Agfa" remains in the ownership of Agfa-Gevaert NV. The brand "Agfa" (AGFA + rhombus logo) has been licensed by Agfa-Gevaert to AgfaPhoto for a transitional period for communication related to silver halide film rolls and consumer products on the market as of November 1, 2004. Because Agfa has *not* been licensed as a company name, however, a clear distinction should be made between Agfa (Agfa-Gevaert NV) and AgfaPhoto.

On May 27, 2005, AgfaPhoto filed for bankruptcy. According to an Associated Press (AP) article filed on May 27:

Film Maker AgfaPhoto Files for Banktruptcy

"FRANKFURT, Germany (AP) – Hit by the shift to digital photography, AgfaPhoto GmbH, a maker of film and disposable cameras, filed for bankruptcy on Friday. A court in the company's hometown of Leverkusen, outside Cologne, opened bankruptcy proceedings that will determine whether the company survives. AgfaPhoto has 2,400 employees worldwide, 1,800 of them in Germany."

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